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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,030	10/30/2003	John H. Kidd	4226-000047	7123

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EXAMINER

KASSA, YOSEF

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,030

Applicant(s)

KIDD ET AL.

Examiner

YOSEF KASSA

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long et al (U.S. Patent 6,166,811), and further in view of Smith (U.S. Patent 5,125,298).

With regard to claim 1, Long discloses collecting measurement data for a measured object (see col. 3, lines 8-15, reads on measuring the workpiece);

defining model data (see Fig. 1, Vehicle door) representative of an assembly environment (note that Fig. 1, Shows vehicle door assemble process) for the measured

object (see Fig. 1, shows measuring workpiece), where the assembly environment is defined by surfaces of objects that are adjacent to the measured object in an assembled configuration (see col. 3, lines 25-40); and, thereby assessing the measured object in relation to the assembly environment (see col. 3, lines 1-7).

Long does not disclose expressly comparing the measurement data with the model data for the assembly environment. However, in the same field of endeavor, smith teaches this feature (see col. 10, lines 39-52). At the time of the invention was made, it would have been obvious to a person an ordinary skill in the art to incorporate the teaching of Smith's vehicle part assembly process into Long's system. The suggestion/motivation for doing so is to compare the two pictures taken by camera for assembling vehicle wheel (see col. 10, lines 42-52). Therefore, it would have been obvious to combine Smith with Long to obtain the invention as specified in claim 1.

With regard to claim 2, Long discloses wherein the step of collecting measurement data further comprises capturing image data indicative of the measured object using a non-contact sensor (see sensor 20, of Fig. 1), the image data being defined in relation to a first reference frame (see col. 3, lines 28-40).

With regard to claim 3, Long discloses aligning (synthesize) the model data representative of an measurement data for the measured object with assembly environment prior to comparing the measurement data with the model data (see col. 3, lines 55-65).

With regard to claim 4, Long discloses step of aligning further comprises translating the measurement data from the first reference frame to a second reference

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frame associated with the model data for the assembly environment (see col. 4, lines 1-15).

With regard to claim 6, Long discloses measurement data with the model data further comprises computing at least one of a gap measure and a flushness measure between the measured object and an adjacent surface of the assembly environment (note that the assembling process shown in Fig. 1 which broadly reads on gap and flushness measurement because, it is well know in the art of object assembling process that measure or estimate the gap and flushness values of the assembled object).

Claim 7 is similarly analyzed and rejected the same as claims 1-4 and 6. Claim 7 additionally recites "aligning the measurement data with model data representative of an assembly environment for the assembly component" (note that the synchronizer 42 synchronize (align or assemble) the image data received form the sensor 20 and the position data (measurement) received from the position reporting device 24 see col. 1, lines 10).

Claim 8 is similarly analyzed and rejected the same as claims 1-4 and 6. Claim 8 additionally recites "a non-contact sensor mounted to a movable member of a robot, the non-contact sensor operable to collect measurement data representative of the surface of the assembly component" (see col. 3, lines 8-10 of Long); and "a data structure for storing model data representative of an assembly environment" (see col. 5, lines 13-17 of Long).

Claim 9 is similarly analyzed and rejected the same as claim 3.

2. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Long et al (U.S. Patent 6,166,811) and Smith (U.S. Patent 5,125,298) as applied to claims 1-4 and 6-9 above, and further in view of Day et al (U.S. Patent 4,639,878).

With regard to claim 5, Long is silent about defining one or more inspection points along a periphery of the measured object and comparing the measurement data with the model data at each of the inspection points. However, in the same field of endeavor, Day teaches this feature (see col. 4, lines 8-24 also see col. 4, lines 43-58). At the time of the invention was made, it would have been obvious to a person an ordinary skill in the art to incorporate the teaching of Smith's object assembly process into Long's system. The suggestion/motivation for doing so is to determining the position and attitude of the image body in space having three target points at a vision station having a fixed coordinate system (see col. 4, lines 43-50). Therefore, it would have been obvious to combine Smith with Long to obtain the invention as specified in claim 5.

Other Prior Art Cited

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. (5706325) to Hu discloses exact regional reconstruction of...

US Patent No. (673978978) to Maas discloses wheel alignment assembly and method.

US Patent No. (5829114) to Kleefeldt discloses aligning a motor-vehicle door.

US Patent No. (5881780) to Matye et al discloses apparatus for and method of locating...

US Patent No. (5084611) to Okisu et al discloses document reading apparatus...

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOSEF KASSA whose telephone number is (703) 306-5918. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BHAVESH MEHTA can be reached on (703) 308-5246. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communication and (703) 872-9306 for after Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PATENT EXAMINER

Yosef Kassa



04/26/05.



**BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**